

REMARKS

Entry of this amendment, and reconsideration and allowance of this application, as amended, is respectfully requested.

This amendment is in response to the Final Office Action dated April 21, 2003. Appreciation is expressed to the Examiner for the allowance of claims 12-16 and 20-26 as well as for the indication of allowable subject matter in claims 2-5, 10 and 11.

By the present amendment, each of claims 2, 4, and 10 have been redrafted into independent form to place them in condition for allowance in light of the indication on page 3 of the Office Action that claims 2-5, 10 and 11 would be allowed if this step were taken. Accordingly, entry of this amendment and allowance of claims 2-5, 10 and 11, together with allowed claims 12-16 and 20-26, is respectfully requested.

Reconsideration and removal of the rejection of claims 6, 7, and 17-19 under 35 U.S.C. § 112, first and second paragraphs, is also respectfully requested. Claims 6 and 7 have been cancelled without prejudice, thereby rendering the rejection moot in this regard. Claim 17, on the other hand, has been amended to define extinguishing of captured electrodes that have been captured by channel carrier capture levels, as support by the specification on pages 16 and 17. Claim 19 has been amended to eliminate the word "first" to provide proper antecedent basis for the remaining language of "said portion" (noting that this support can be found in the phrase "a portion of said channel region" in claim 17). Accordingly, reconsideration and removal of the rejection of claims 17-19 under 35 U.S.C. § 112, first and second paragraphs, is respectfully requested.

Entry of this amendment is requested, notwithstanding the finality of the Office Action. Under the provisions of 37 CFR § 1.116, amendments made to comply with requirements of form set forth in a previous Office Action are permitted entry even after final rejection. Similarly, amendments for placing a case in better condition for appeal are permitted. In the present instance, the amending of claims 2, 4, and 10 into independent form corresponds to the suggestion made on page 3 of the second

paragraph of the Office Action to place these claims in condition for allowance. As for the amendments of claims 17 and 19, it is noted, with appreciation, that the Office Action effectively suggests the amending of claim 17 to correspond to the language found on pages 6 and 17 and the correction of claim 19 to provide proper antecedent basis. Inasmuch as the present amendment simply follows the suggestions made in the Office Action for purposes of overcoming the 35 U.S.C. § 112, first and second paragraph rejections, entry of this amendment is earnestly solicited. With regard to this, it is noted that this amendment should not require any further search or substantial consideration on the part of the Examiner since these changes essentially correspond to the suggestions made in the Office Action.

Turning to the rejection of claims 1, 8 and 9 over Jambotkar (USP 4,223,329), reconsideration and removal of this rejection is respectfully requested. In the Office Action, the layer 10 of Jambotkar is identified as reading on the "single channel between said first and second conductivity type source regions" of independent claim 1 and independent claim 9. However, it is respectfully submitted that a closer examination of Jambotkar reveals that a channel layer corresponding to the source layer 17 is a buried channel formed in the layer 10 while a channel layer corresponding to the source area 20 is a surface channel formed in the layer 10. This can be appreciated from studying Fig. 4 of Jambotkar. In particular, it is noted that on the left side of Jambotkar, a "buried charge packet" of positive carriers is identified in the lower portion of the layer 10. On the other hand, a "surface charge packet" of negative carriers is identified in the upper right portion of Fig. 4 in the layer 10. As such, rather than serving as a single channel region, the layer 10 of Jambotkar effectively operates as a two channel structure having a surface channel and a buried channel.

This structure and operation as a two channel device is clearly set forth in column 2, lines 13-14 of the specification of Jambotkar. Specifically, as noted there, the invention in Jambotkar is directed to an arrangement which:

"A single charge-coupled device stores and transfers two separate independent serial bit streams of information. A first bit stream comprises a series of charge carrier packets of one conductivity type (e.g. electrons) flows along a first channel at the surface of the semiconductor. A second bit stream comprising a series of charge carrier packets of the opposite conductivity type (e.g. holes) flows in the second channel buried within the bulk of the semiconductor and spaced from the bit stream at the surface of the semiconductor."

From the above quote of column 2 of Jambotkar, Jambotkar himself specifically identifies a first channel at the surface of the semiconductor and a second channel, separate from the first channel and buried within the bulk of the semiconductor. As such, it is respectfully submitted that Jambotkar clearly does not anticipate the claimed feature of "a single channel between said first and second conductivity type source areas." Quite to the contrary, Jambotkar is directed to a structure having two distinct channels within the layer 10. Therefore, it is respectfully submitted that layer 10 of Jambotkar cannot be properly interpreted as a single channel structure as required by independent claims 1 and 9, and reconsideration and allowance of these claims, together with dependent claim 8, is respectfully requested.

Reconsideration and allowance of claims 17 and 19 over Ohkubo (USP 6,166,786) is also respectfully requested. In the Office Action, the regions 12 and 13 of Ohkubo are identified as "source" regions. In particular, this is apparently meant to read on the first source region of a first conductivity type and the second source region of a second conductivity type set forth in claim 17. However, it is respectfully submitted that a careful reading of Ohkubo indicates that the area denoted with the reference numeral 13 is not actually a source region. Quite to the contrary, the only source in Ohkubo is the region 11, as discussed, for example, in column 5, lines 5-10. Region 12 of Ohkubo is a drain region, as discussed with regard to embodiment 1. With regard to the region 13, it is noted that this is a region for relaying electric fields, and no external terminal is connected to this p-type semiconductor region 13. This is apparent, for example, from the discussion found on column 3, lines 4-8 of

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that reference. Since there is no externally inputted terminal connected to the p-type semiconductor region 13, it is clear that this region cannot operate as a source terminal since this would require a carrier supply which does not exist for the region 13. Therefore, it is respectfully submitted that Ohkubo is only a single source device and cannot read on the first and second sources set forth in claim 17. Therefore, reconsideration and allowance of claims 17 and 19 over Ohkubo is also respectfully requested.

If the Examiner believes that there are any other points which may be clarified or otherwise disposed of either by telephone discussion or by personal interview, the Examiner is invited to contact Applicants' undersigned attorney at the number indicated below.

To the extent necessary, Applicants petition for an extension of time under 37 CFR 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account No. 01-2135 (Case No. 500.40674X00), and please credit any excess fees to such Deposit Account.

Respectfully submitted,

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